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SELF-EMPLOYMENT AS AN INDICATOR OF ASSIMILATION? EVIDENCE FROM FOREIGN ENTREPRENEURS IN GERMANY

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The rising rate of unemployment in Germany has led to an increased interest in self-employment as a possible solution to the problem. At the same time, the rising presence of foreigners, who tend to be harder hit by unemployment than natives, has intensified the interest shown by researchers, politicians, and the public in their plight. The usual calls for intensified efforts to get foreigners to assimilate, which accompany times of economic hardship, can again be heard. This paper explores whether efforts to ease unemployment and to increase assimilation can be one and the same. In other words, we try to establish if self-employment among foreigners in Germany can be seen as an indicator of assimilation. There are three major thrusts to arrive at an answer. The first looks at the heterogeneous nature of immigrants' labor market experience. We isolate cultural factors which increase the likelihood of becoming self-employed. This nationality-group specific decision model intensifies (or in some cases, reduces) the effect of socioeconomic variables on the choice of becoming self-employed. The second path looks at the quality of immigrants' self-employment experience. We find extremely different branch choices between nationality groups. Further, in examining measures of success such as income and number of employees, we do not come to any clear-cut answers. We find, instead, that foreign self-employment may, in fact, be very high quality or it may be lower than that of Germans. Self-employment does seem to represent an improvement over wage employment. Finally, we look at the effect of assimilation, in the form of the second generation or years-since-migration, on participation in the market for entrepreneurship. We find that nationalities with low self-employment rates will increase their participation with assimilation. Nationality differences remain preserved.

Those who dream by night in the dusty recesses of their minds wake in the day to find that all was vanity; but the dreamers of the day are dangerous people, for they may act their dream with open eyes, and make it possible. (T. E. Lawrence)

1. Introduction

This paper focuses on two relatively less-developed areas of research in economics and sociology. It combines the recent empirical interest in self-employment research with the still young area of immigrant research. Specifically, the self-employment experience of immigrants in Germany as a distinct group influenced by socioeconomic factors is examined in some detail. While aspects of the immigrant experience have been treated in contrast to that of the native population, this study goes a step further by shedding light on the heterogeneous nature of the immigrant experience as evidenced by self-employment. Foreigners stand in the center of this investigation, not just their impact on Germans' labor market prospects, as in other studies.

Why examine self-employment, and why among foreigners? Ever since the work by Birch (1979), self-employment has been seen as the solution to unemployment problems by politicians and some economists. Entrepreneurs provide jobs for themselves and potentially for others. Small, young firms are viewed as both flexible, that is, able to maintain jobs by adjusting to changing economic conditions, and innovative, by applying new technologies. Foreigners are of interest since their number has increased and continues to rise despite Germany's lack of an immigration policy. In addition, immigrants in Germany tend to be impacted by unemployment more severely than Germans. Alleviation of unemployment through self-employment may therefore be more important for immigrants than for Germans. Due in part to the rising share of foreigners in Germany, questions of their assimilation usually stand at the head of any debate about the benefits of immigration. Integration of former guest workers along with restrictions to further immigration serve as the only guiding principles to Germany's policy towards foreign residents. Therefore, assimilation issues are of a major concern for political as well as economic policy.

1.1 Purpose of the Study

Various measures of immigrant integration have been proposed. These include subjective measures from a "sense of identification" with a group to perceived language fluency, and objective measures from wage and education equality with natives to employment patterns. Cornelsen (1990: 90) argues that the foreign self-employed are of particular interest, not because of the size of the group, but rather, from the standpoint of the integration of foreigners. He reasons that the increase in immigrants' share of the total self-employed as well as the rising self-employment rate among foreigners are evidence of increasing integration.

The foreign share of all self-employed rose from under 2% (or 38 thousand) in 1970 to just above 5% (124 thousand) in 1988. Can the proportion of immigrants in self-employment be considered a sign of assimilation? Can self-employment rates be used as a measure of integration? Numerous other questions about self-employment would need to be answered before we can reply. This study's purpose is to begin answering some of these questions.

The predominant focus in this paper is whether self-employment among foreigners provides an indicator of assimilation. There are three broad questions which will be used to arrive at the answer: 1) Do immigrants apply different decision structures to self-employment than natives? 2) To what extent is the self-employment of immigrants comparable to the self-employment of Germans? And, 3) Does assimilation, in the form of being part of the second generation or in terms of years-since-migration, increase the likelihood that immigrants are self-employed?

1.2 Definitions: Foreigners and Self-employment

The two legal categories of citizenship status are adjusted for the purpose of this study. One's birth place can be used to define both nationality and one's citizenship, the principle of *ius soli*. Alternatively, citizenship can be defined by the *ius sanjuinis* principle, or blood heritage. Due to German citizenship laws, applying *ius sanjuinis*, even persons born in Germany are not automatically German citizens. Many foreigners have long-term intentions of staying in Germany, consider Germany their home, and are not in the immigrating generation. These facts make a large proportion of "foreigners" German in every way except their passports. In the ethnically mixed Kreuzberg district of Berlin, for example, foreigners have complained about Germans moving into the area. Some of the non-Germans have been in the country for generations, while the Germans at issue are newly arrived ethnic Germans from the former Communist countries. In this study, the legal definition of foreigners is divided into the first generation and second generation (so called *Bildungsinländer*, that is, foreigners educated in Germany). The second generation includes those that have spent 75% of their lives in Germany. These two groups are compared to natives. It must be emphasized, that the category of natives also contains the foreign-born that chose German citizenship as well as foreign-born ethnic Germans, who automatically receive German citizenship.

Self-employment is defined for purposes of this study as work for profit or fees in one's own business, profession, or trade. Categorization into this employment type occurs

through self-definition in the Mikrozensus survey.[1] The legal form of the business is irrelevant for purposes of this study; it may be either a sole proprietorship, partnership, or corporation. If incorporated, the owner technically draws a salary but is still self-employed.[2] For detailed examinations of self-employment incomes this distinction would make a substantial difference, as would the access to capital for studies of wealth effects on self-employment.

The sample used for the analysis, restricted to persons living in the western German states between the ages of 18 and 65 with available information about their position at work, contains 194,762 observations (representing 31.653 million people of which 3.215 are non-Germans). All of the figures quoted in this study have been calculated from ZEW 70% sample of the 1995 wave of the Mikrozensus survey, unless otherwise noted. In most cases, either percentages or representative numbers are reported, rather than number of observations. This allows comparisons with numbers reported elsewhere.

1.3 Organization of the Study

Section 2 presents some background material and theory of which this study makes use. Propositions about the self-employment experience of foreigners are made and testable hypotheses developed. We briefly examine the data situation and then move on to a model of the self-employment decision.

Sections 3 through 5 correspond to the three components of immigrants' entrepreneurial experience: comparisons of the self-employment decision, the self-employment quality, and the generation effects on the decision. Section 3 provides a view of the current stand of foreigners in Germany, acting as a type of inventory. Some of the factors influencing the self-employment choice will be compared across ethnic groups. The section then probes the question if there truly are differences in self-employment rates across nationalities, or whether these are just a reflection of the differences in socioeconomic variables that are reported. The self-employment decision will be modeled, with Germans used as the reference group, and then for each ethnic group individually.

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1 Two questions allow definition as self-employed: position at work (management, clerical, trainee, etc. or self-employed) and job type (civil service, white-collar employee, blue-collar worker, trainee, etc. or self-employed). Each question further distinguishes between self-employment with and without employees.

2 Germany does distinguish between corporate owner-managers in the self-employment statistics or in employment permitting. However, other countries, including Australia, Canada, France, Japan, the Netherlands, New Zealand, Norway, and the United States, categorize owner-managers of corporations as employees, making cross-country comparisons difficult.

Next, we ask ourselves if self-employment of Germans and immigrants is comparable. The goal is to arrive at some indication of qualitative differences in work alternatives across nationalities. The questions of what branches are chosen for self-employment and whether they are different from Germans' choices form the core of Section 4. Self-employment may not be a measure of assimilation if the job quality is completely different.

Section 5 examines assimilation effects on self-employment. Two procedures are applied: contrasting first- and second-generation immigrants and comparing the effects of time spent in Germany. It is assumed that the second generation is more assimilated than the first. Similarly, we suppose that assimilation increases with years since migration. A comparison, holding socioeconomic factors constant, allows us to see if assimilation of foreigners in Germany leads to higher or lower self-employment rates.

What variables drive immigrants' probability of becoming self-employed and to what extent? Does ethnicity play a role in the decision to be or the likelihood of becoming an entrepreneur? Do foreigners enter self-employment because of discrimination and poor alternatives in the wage and salary sector? In which direction does assimilation impact the self-employment decision? Conclusions to these questions are reported in Section 6. This also takes stock of weaknesses in the methods applied here and suggests options for future investigations. By examining these questions, we can better answer the main one, whether self-employment results from assimilation or discrimination.

2. An Assimilation Theory of Self-employment

The sociological literature distinguishes between assimilation and integration. Assimilation can be defined as a process that leads to the adoption of a host culture by foreigners. Integration is much more superficial. It involves a blending of two cultures. The immigrant can function in the new society, that is, he is not restricted to particular areas (physically, as in immigrant camps, or psychologically, not daring to visit a store or office). Integration of new immigrants can occur without assimilation if an ethnic colony exists. The popular terms to describe the concepts of assimilation versus integration provide a helpful illustration and have even made inroads into the serious sociological discussions. Assimilation has often been conceptualized as the Melting Pot. Cultures living in the same society become like each other and the smaller group undergoes the largest adjustment, becoming like the majority. The Salad Bowl forms the metaphor for integration. The cultures are placed together, but keep their own flavors and identities. Emphasis needs to be given to the fact that integration requires that the cultures are placed together, not into separate vessels, so that mixing can occur.

Personal, cultural, and environmental factors may directly affect the choice to assimilate (Esser 1980) and the choice to become (self-) employed. These factors may also indirectly impact one choice through the other. For example, an immigrant that has decided to assimilate based on personal factors will probably make different employment choices than a person who has chosen to remain segregated. The degree of assimilation has implications for the immigrant's labor market prospects, specifically self-employment. At the same time, access to the labor market will affect assimilation.

2.1 The Utility Maximization Model Defined

The starting point for the econometric model is the utility maximization function of a labor force participant. The utility function presented in the study by Börsch-Supan and Pfeiffer (1992) is adapted to the current investigation.[3] The individual participating in the labor market faces two choices: self-employment (*SE*) or wage / salary employment (*WSE*). These two alternatives provide the individual with an hypothetical utility u_i, i = *SE*, *WSE*. The utilities depend on characteristics of the worker, including level of risk aversion, management ability, age, etc., and on the expected income in each alternative choice. The explanatory variables are aggregated in matrix x, with x_k representing the manifestation of the k^{th} variable. Unfortunately, the Mikrozensus does not contain variables from which the numerous psychological and sociological factors impacting the self-employment decision can be derived. The unobserved factors influencing the decision i are aggregated in a cumulative normal error term, e_i. The utility values, u_i, are also random variables. For the sake of simplicity, an additive function is assumed:

$$(1) \quad u_i = v_i\,(x,b) + e_i = \Sigma\, x_k\, b_{ik} + e_i$$

The deterministic part of the utility function, $v_i\,(x,b)$, depends on the parameters b_{ik}, which describe the impact of the k^{th} variable, x_k, on the employment choice, i. For the decision between the employment options, the relative utility differences are decisive. According to the utility maximization hypothesis, the following will be true:

(2a) a labor force participant is self-employed if $u_{SE} - u_{WSE} > 0$
(2b) a labor force participant is an employee if $u_{WSE} - u_{SE} > 0$

In the most general terms, ability and risk tolerance are seen as the main factors which lead to self-employment. Certain common socioeconomic variables are expected to influence the self-employment decision, since these are partly related to ability and risk toler-

3 For alternative models, see Friedhelm Pfeiffer (1994).

ance. Increases in some variables or the applicability of a category may increase the probability of a person being self-employed. In other words, the likelihood of:

Self-employment is a function of age, education, gender, marital status, household size, community size, location, *nationality, years-since-migration, immigrant generation*.

The variables in italics are of special interest in this study. These variables include the immigrant effect and the nationality effect. The other variables have been included in most empirical studies on self-employment. They are important determinants and must be considered, or better yet, controlled for when trying to discover if there are immigrant and nationality effects.

2.2 Values Influence the Utility Function which Drives the Employment Decision

The positive self-employment decision is explained by the higher net utility a rational person derives from self-employed work relative to wage and salary employment. What we observe is not the utility function itself, but the outcome, that is, the probability of an individual being self-employed given certain factors. Lower expectations from self-employment (requiring a smaller utility difference between self-employment and wage and salary employment), keeping skills the same, may increase the likelihood of self-employment.

Besides the utility function, another factor that we do not observe directly is the degree of assimilation. Instead, assimilation will affect components and weights in the utility function. To provide a concrete example, an assimilated foreigner may have better German-language skills (than an unassimilated person) which enters the utility function. This component may be more rewarding, in terms of utility, in one employment type or the other. German values held by an assimilated immigrant may change weights assigned to components of the utility function. If the "typical" German values leisure over independence in a job, then the assimilated foreigner will apply a similar ranking even if his source culture has the opposite preference. In other words, keeping the relative benefits of self-employment and wage and salary employment constant, the choice may change through assimilation.

Our only suspect to explain the difference in rates of entrepreneurship is the utility function. Income is certainly a component of utility. However, there are many others as well. Work environment, flexibility, and intrinsic value of the work represent further components of the utility function. These features may be found to varying degrees in both self-employment and paid employment. Other characteristics may be more common to one form of employment or the other. Independence and prestige of being an owner apply only to self-employment. On the other hand, wage and salary employment may provide the benefit of limited responsibility.

How these different features are weighed are a personal decision. However, collective components, such as cultural identity, will also have an influence. More concretely, some cultures give independence a higher ranking than income potential when asked to identify the most important features of potential employment. Other cultures may place limited responsibility or income at the top of the list of features desired in a job. Goldberg (1996) reports the diverse responses to questions of desirable job qualities and the reasons for becoming self-employed. Hofstede (1989) provides several indices of characteristics which affect socialization at the workplace. The differences of these measures across nationalities can also be related to self-employment. As such, it is not only possible, but probable that different people and diverse cultures rank self-employment higher than wage employment, given the same earnings potential.

Blanchflower and Oswald (1990) theorize that the indifference locus for the marginal entrepreneur takes a concave form based on the relationship between the marginal level of utility from independence and the marginal level of entrepreneurial ability. In other words, persons with a high level of entrepreneurial ability will need only a low desire for independence to enter self-employment, while low-ability persons will need to have a strong desire. This implies that those with a strong enough desire for independence will not be discouraged by their lack of ability. If foreigners have a higher desire for independence than Germans do, then given the same levels of ability, they should have higher rates of self-employment. If the spirit of independence remains the same across ethnic groups, then skills may explain differences in self-employment rates.

The different utility functions explain why foreigners may enter self-employment when natives do not see it as profitable. By extension, it also explains why immigrants stay in business in areas or branches that natives have abandoned. For an immigrant, the non-pecuniary rewards of self-employment may offset the low income, while the German has no such trade-off. What may be seen as a failure by one group, may be seen as an opportunity for another. This could explain a higher self-employment rate among immigrants. A lower rate can be similarly explained; the benefits of self-employment are discounted in the utility function. One should note, however, that the utility of self-employment may be reduced due to implicit branch restrictions for immigrants. These are caused by foreign training often not being accredited in Germany and by the fact that certain trades require a German trade-master's degree. The utility bonus ascribed to self-employment may only be present for the more desirable branches of economic activity.

Different utility functions imply different beliefs and values. Ergo, assimilation requires similar utility functions, revealed in similar self-employment outcomes. The same self-employment rate can be expected for natives and immigrants (if we control for socioeco-

nomic differences). The market equilibrium rate is approximated by the self-employment rate of natives. As the largest group, with the least restrictions, they probably come closest to representing the equilibrium for the entrepreneurship market. High self-employment foreigners may, therefore, experience declining self-employment rates as they assimilate, while low self-employment immigrants, increasing self-employment rates. Again, the closer the rate of foreigners is to the German (equilibrium) rate, the more assimilated the group may be.

Sociologists may protest and say that social networks were ignored in the model. This is only in interest of simplicity, to make the complex issues of markets and utility functions easier to explain. Social networks may enter the model if we also take costs into account. Self-employment will only be chosen if the utility minus the costs (which create a negative utility) from self-employment is greater than the utility from paid employment. Social networks play a role in reducing costs, providing information, physical assistance, and even capital. We can now formulate our first proposition.

Proposition 1: Nationality is an important factor affecting the self-employment choice. The effects of socioeconomic variables on self-employment probabilities will vary by nationality. Even if socioeconomic determinants of self-employment did not vary across ethnic groups, nationality would still remain an influential factor of self-employment likelihood. The nationality variable, in other words, helps explain differences in self-employment rates not just between natives and foreigners, but across nationalities. To verify the proposition, the following hypotheses will be tested:

Hypothesis 1a: Socioeconomic determinants of self-employment will take on different weights for different nationalities.
Hypothesis 1b: Differences in socioeconomic variables only account for a portion of self-employment rate differences. Cultural factors, represented by nationality, influence a further part of the self-employment propensity.

2.3 Self-employment as an Assimilation Measure: Job Quality as the Key

How do we control for differences in job quality? After all, one job is not the same as another job, and the differences may be even more extreme in self-employment. Job quality can be approximated by income. Surely, there are other factors that affect the work environment, but these are difficult to measure and do not appear in a database in which we can compare different nationalities. One additional factor that we have available to measure success is business size. We can assume that a higher number of employees are an indicator of self-employment quality. Perhaps having employees allows delegation of the less pleasant aspects of the work.

Blanchflower and Oswald (1990) consider the effects of income at the market equilibrium (for entrepreneurs). With free entry into self-employment possible, equilibrium would require that, at the margin, the utility from wage work would equal the utility from self-employment (including income and non-pecuniary utility). If wages are low, then the utility gains from entrepreneurship will be high, providing an incentive to move out of wage and salary employment to self-employment. The opposite also holds true; high wages reduce the incentive of moving into self-employment. For the study of foreigners, this implies that segregation into lower paying wage and salary jobs could increase the returns of being self-employed, driving up the incentives of entrepreneurial activity. If foreigners are concentrated into few jobs or industries as workers, and these provide little chance of mobility (into better jobs or higher pay), then immigrants would have much to gain through self-employment.

Diagram 2.1: Self-employment Rates and Quality

		SELF-EMPLOYMENT QUALITY		
		different		*same*
		Higher	*lower*	
SELF-	*higher*	may be assimilated	not assimilated	not assimilated
EMPLOYMENT	*lower*	not assimilated	may be assimilated	
RATE (relative to natives)	*same*	not assimilated		assimilated

What does the self-employment rate tell us if we also keep in mind the quality of self-employment? If immigrants are employed in lower quality jobs, this may again be an indicator of less assimilation, depending on the self-employment rate. If the quality is the same, the rate should also be the same. Higher or lower rates, given the same quality, may indicate the opposite of assimilation. Diagram 2.1 summarizes the interaction between assimilation, self-employment quality, and self-employment rates. This leads to Proposition 2.

Proposition 2: Self-employment for foreigners is not only different, but qualitatively worse, than Germans' self-employment. As such, high self-employment provides evidence of segregation, rather than assimilation. The following hypotheses will be examined to test the proposition:

Hypothesis 2a: Foreigners are segregated from natives in branches of self-employment.

Hypothesis 2b: Immigrants may be restricted to the less profitable forms of self-employment. A higher concentration in the lower quartile of incomes may be found for foreigners. The move into self-employment may not bring an income improvement but rather an income reduction.

Hypothesis 2c: Foreigners predominantly run the smallest of businesses. They will mostly be self-employed without employees and almost never with the largest employee category (five or more).

2.4 Assimilation Effects

According to our theory, we may expect higher self-employment rates for the more assimilated immigrants. Members of the second generation can serve as proxy for assimilation. The second generation has significant advantages in assimilation. Competing cultural ties are missing, or at least weakened. An undivided socialization (in the host country) removes friction and allows for an almost effortless assimilation, according to Esser (1980: 231). Their better integration into and understanding of the local economy and labor market should lead to higher self-employment, according to the human capital model. An overview of the bureaucracy and established social and business networks also increase the ability to set up an independent business.

Another economic theory predicts just the opposite effect of integration on self-employment rates. Velling (1995), citing Wolfgang Seifert, argues that, as a rule, the second generation has good German language skills and tends to be culturally more integrated than the first generation. Greater skill match (language ability,[4] recognized degrees) could mitigate the effect of increased integration, if push factors are predominant in influencing the choice to become self-employed. That is, if the quality of self-employed work is low, then more assimilated immigrants will not choose self-employment despite better ability to do so. They will forego the less desirable opportunities just as natives do. In other words, if foreigners possess the necessary communication skills and accepted degrees, then they will not need to turn to self-employment to receive the pay and recognition they feel they deserve. If discrimination and segregation lead to self-employment, then a reduction in discrimination and an increase in integration will lead to less self-employment.

According to our theory, we expect the self-employment rates of assimilated immigrants to converge at the German ("equilibrium") level if job quality is the same. By extension, we would also anticipate lower self-employment probabilities for assimilated foreigners if

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4 Improvements in language ability with increased lengths of stay have been tested empirically. See Velling (1995) for references to such studies for the US and Germany.

the job quality were lower. However, equal or better opportunities would allow the rate to come relatively close to the Germans' rate in the aggregate.

The first generation of immigrants faces higher hurdles in moving into self-employment than the second generation. Information costs may be higher (limited language ability, unfamiliarity with the "system", want of networks) and capital may be lacking (assets absorbed by immigration, lack of access to credit). However, in order for self-employment to be chosen by an immigrant, the advantages of self-employment (the expected utility from self-employment minus the expected utility from wage and salary employment) must exceed the hurdles (the costs of a transition into self-employment).

For the second generation, the costs of transition to self-employment probably declines. The increased integration into the host country may lower hurdles faced by the first generation. However, this increased integration also may have reduced the differential between self-employment and wage and salary employment. The skills of the first generation may be discounted by employers (that is, certain skills may not have been demanded or degrees may not have been recognized) and, therefore, lead to lower than expected pay. Self-employment is seen as a way to more fully exploit those skills and to receive compensation for them. Since the skills of the second generation more closely match what the labor market demands (and the skills others, including natives, may supply), the pay they receive may also come closer to their own expectations. In other words, the second-generation faces lower costs in moving into self-employment but may only make that choice at a lower rate than the first generation since the advantages of self-employment (relative to wage and salary employment) have also been reduced. This leads us to formulate Proposition 3:

Proposition 3: Self-employment rates in the second generation will be closer to native rates than in the first. Assimilation (language ability, schooling, familiarity with the "system") will increase the chances for successful self-employment. Self-employed parents or friends as role models or the opportunity of inheriting a business may also be factors. Immigrant groups with higher rates in the first generation will see a decline in entrepreneurial activity. Nationality will again account for differences in self-employment rates of the second generation. The effect of years-since-migration will be similar to the generation effect. We will test the following hypotheses to verify the proposition.

Hypothesis 3a: Second-generation (and later) foreigners will have higher self-employment rates than the first generation if self-employment is positive and if the rate was lower than for Germans. Nationalities will become more similar.

Hypothesis 3b: The self-employment rate will fall in the second generation if self-employment is a negative and / or the rate was higher in the first generation than for natives. Nationality differences will decrease.

Hypothesis 3c: Years-since-migration will increase self-employment rates if the selection is positive. Differences in nationalities will continue, however.

2.5 Other Studies

What explains differences in self-employment rates? Meyer (1990), in a study of black versus white entrepreneurship in the United States, examines the roles of liquidity constraints and consumer discrimination in explaining differences in self-employment rates. Through his empirical investigation he finds that neither of the two theories can account for the differences in the self-employment rates. Instead, he concludes that cultural differences may explain the dichotomy. While the studies by Meyer (1990) and Blau and Graham (1990) do find dramatic differences in the size of blacks' and whites' assets, they do not impact self-employment. Evans and Jovanovic (1989) and Evans and Leighton (1989), however, emphasized the role of an individual's assets in the self-employment decision. Blanchflower and Oswald (1998) find that increasing capital, through gifts or inheritance, raises the probability of self-employment. They control for personal, family, and geographic characteristics and separate inherited businesses from the sample. In a study of reasons for becoming self-employed in Britain, Taylor (1996) also finds wealth (measured by housing equity) to be a significant factor positively affecting the self-employment decision. However, it should be noted that it provides only a secondary explanation (in terms of significance and size of the coefficient) relative to earnings and independence measures, especially if the amount of housing equity is too low. Only when housing equity exceeds 100,000 Pounds Sterling, does the positive impact of wealth exceed that of the income differential and the desire for independence.

Along the same lines, limited access to credit has also been cited as an explanation for lower self-employment rates among minorities.[5] However, the role of credit from formal institutions has been downplayed in the studies by Light (1972) and Sowell (1981). They conclude that people do not generally borrow to establish a business, and if they do, friends and relatives are the source. Blanchflower and Oswald (1998) calculate that of the 243 "recently self-employed,"[6] included in the 1987 British National Survey of the Self-

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5 See Ando (1988), for example; although the evidence is weak because of the limited and unrepresentative nature of her sample.

6 This category included only adults who had become self-employed in the previous four years, remained self-employed, and with fewer than six employees.

employed, 42% reported the main source of finance used to set up the business was their own savings, 15% borrowed from family or friends, and 17% took out a bank loan. Balkin (1989), in analyzing U.S. Bureau of the Census data for 1982, finds that between one quarter to one third of the business owners started with "no capital", and 60% to 70% started with $5,000 or less.

Consumer discrimination has been proposed by some as an explanation for lower self-employment rates among minorities. Other economists, including Moore (1983) and Borjas and Bronars (1988), see consumer discrimination as a secondary explanation. The gist of the consumer discrimination model is that whites prefer to do business with whites. Only if they could pay less would whites patronize a minority business. The wage impact of discrimination can be applied more easily to the self-employed than to employees. Wage and salary workers can move into jobs with less consumer contact to reduce the discrimination effect. However, the same option is not available for a sole proprietor, who must interact with his customers.

Borjas and Bronars (1988) argue that positive selection in an earnings equation for the white self-employed and negative selection for the black self-employed is a test of consumer discrimination. In other words, they claim that consumer discrimination will lead more-able whites and less-able blacks to become self-employed. Meyer (1990) comments that this merely proves positive and negative self-employment selection for whites and blacks, respectively, but cannot be taken as evidence of consumer discrimination. Light (1972), Sowell (1981), and Moore (1983) argue that the labor market pushes those discriminated against into self-employment, where the rewards more closely depend on an individual's ability.

Macroeconomic factors, namely unemployment and regional differences, have been cited as significant influences in the self-employment decision in some studies and dismissed as insignificant in others. Justification for including unemployment in the explanation for self-employment relies either on the unemployment push theory or on the prosperity pull theory. According to the former, a person faced with unemployment chooses self-employment rather than engaging in an unfruitful prolonged employment search. The extreme form of the theory states that longer spells of unemployment and higher overall unemployment in the economy will lead to increases in self-employment. The empirical works of Acs, Audretsch, and Evans (1994) and Evans and Leighton (1989) provide evidence of the unemployment push theory. According to the prosperity pull theory, unemployment impacts self-employment negatively. Persons are more willing to attempt self-employment if unemployment is low because if the venture fails, it will be easier to find a job than during periods of high unemployment. This theory receives support from

the studies by Taylor (1996) and Blanchflower and Oswald (1991). The OECD (1992) also supports this dichotomy of motives for self-employment by looking at the growth rates within certain economic branches in relation to the changes in the unemployment rate. In the case of the United Kingdom, the high-skill sector had higher growth in the second half of the 1980s, when unemployment was falling in the UK, while the generally lower-skill branches had higher growth in the first half, along with rising unemployment, according to the OECD (1992: 172). Of course, self-employment still has to provide a higher utility than wage and salary employment, otherwise it would not have been chosen by a rational person.

2.6 Cultural Factors

While numerous factors influence the likelihood of self-employment, being a foreigner adds a few additional ones. In fact, it may be precisely these immigrant factors that account for the differences in self-employment rates. This is reflected in our model and in the summary of some of the empirical work.

The existence of cultural factors implies that assimilation has not occurred, or only to a certain degree. Through the adoption of German values, we would expect to see German behavior. That is, Germans and immigrants would describe and take advantage of self-employment opportunities equally, since they would have similar utility functions. The lower quality opportunities would be foregone by both groups.

We would expect assimilation to lead to a convergence of values. These values are applied in the personal utility functions which influences the self-employment choice. It is also possible to change directions. We observe the action (self-employment choice) and the alternatives, from which we can make inferences about the values or beliefs. By applying this process to both foreigners and natives, we can draw conclusions about assimilation.

3. Differences in Being Different: Self-employment Inventory

Since assimilation involves adopting beliefs and behaviors similar to members of the host culture, one can conclude that any deviation from the patterns of natives may show lack of or limited assimilation. In other words, assimilated foreigners are expected to show similar self-employment rates as Germans, *ceteris paribus*.

What impacts the self-employment rate? Whole lists of socioeconomic variables, including age, gender, marital status, household size, education, work and unemployment experience, location, wealth, and years-since-immigration, have been tested for their influence on self-employment probabilities. Empirical studies have shown that the likelihood of being self-

employed increases with age. Since foreigners have a younger age profile relative to Germans, this may explain or be the reason for the relatively small number of self-employed foreigners. An obvious first step to answering if self-employment could be seen as a sign of integration would be to set these socioeconomic factors equal for natives and foreigners and then seeing if and how far apart self-employment rates are. One may expect similar behavior and values and, therefore, similar self-employment rates if assimilation of the immigrants has occurred. Along these lines, we could see if these socioeconomic factors explain (or contribute to) self-employment to the same degree and in similar proportions for all ethnic groupings. For assimilated groups we may again expect coefficients similar to the German model. If they are different, we could examine what the impact would be if one group assumed the socioeconomic variables of another group, but kept its self-employment decision structure. These steps allow us to answer the question if the decision models are different across ethnic groups and to point out which parts of the decision structure vary.

Table 3.1: Comparison of Self-employment Rates by Nationality

	number of self-employed in Germany	*Self-employment rate in Germany*	*self-employment rate in home country*
Greek	28,724	12.7	35.4
Italian	37,162	11.1	25.6
FYR	20,593	3.6	–
Austrian	16,841	14.9	10.2
Turkish	35,762	3.6	27.6
W European	40,579	10.7	14.5
E European	7,101	3.4	18.1
African	3,795	4.8	–
American	9,450	12.2	8.5
Middle Eastern	11,751	11.7	–
Asian	6,354	6.5	26.8
all foreigners	220,471	6.9	20.8
German	2,647,287	9.1	n.a.

Sources: own calculations using the 70% sample of the Mikrozensus; home country self-employment rates from *Statistisches Jahrbuch für das Ausland, 1995*. Notes: FYR = Former Yugoslav Republic; American = North, Central, and South American; German = natives and ethnic German immigrants; samples of nationalities too small for individual analysis were combined into groups with some cultural similarity, so that Western European, for example, includes all W. Europeans except the individually listed nationalities (Greek, Italian, Austrian).

In examining community and branch choice, education, and age, we discover that there is no average foreigner. Rather, there are significant differences between foreigners and that these differences in turn vary with the variable being examined. By some measures, certain nationalities even appear to be quite similar to Germans. Putting variations across these vari-

ables aside, Greeks, Italians, Western Europeans, and (North, Central, and South) Americans fairly consistently show high self-employment rates, often higher than those of Germans, as shown in Table 3.1. Just as dependable are the low rates shown by immigrants from the Former Yugoslav Republic (FYR), Turkey, Eastern Europe, and Africa.[7]

To examine the extent to which differences in socioeconomic variables resulted in variations in the self-employment rate, we will briefly turn to some basic regression analysis.[8] Using the tool of econometric analysis, we can control for differences in socioeconomic variables. In other words, we can measure the extent to which these differences account for the contrasting likelihood of being self-employed. We will first examine a model that was estimated for all nationalities, using dummies to control for nationality differences. The results of the estimation tells us that Greeks (6.2%), Italians (3.8%), Austrians (2.5%), and Western Europeans (2.1%) all have higher probabilities (shown in parentheses) of being self-employed than Germans, *ceteris paribus*. For immigrants from Eastern Europe (-4.4%), the FYR (-4.2%), Turkey (-3.3%), and Africa (-2.8%), the probabilities are all lower than Germans'.[9] In other words, just based on nationality, we will see differences in self-employment rates.

Table 3.2 shows the actual self-employment rates in column 2 compared to the predicted rates in the following columns. Column 3 acts as an accuracy check, reporting the predicted rates from each separate nationality model. In column 4, we bestow German socioeconomic characteristics on each nationality group, but keep their distinct decision structure. We can clearly see that merely assuming German characteristics (age, education, etc.) would allow foreigners to attain higher self-employment rates. The exceptions, although the results were not significant, were Austrians, Americans, and Middle Easterners. The low concentration of people in the youngest age categories and high education rates among these groups may explain why there is not a significant increase in self-employment rates through the assumption of German characteristics.

Column 5 of Table 3.2 provides a different perspective. Here we predict what the foreign self-employment rate would be, based on the German decision structure, but keeping each nationality's own characteristics. Immigrants from the FYR, Turkey, Eastern Europe, Africa, and Asia all would have higher self-employment rates given their characteristics if they assumed the German decision model. The results tell us that these nationalities have lower propensities towards entrepreneurship which explain the lower self-employment

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7 For an explanation of nationality categories see the notes to Table 3.1.

8 Results (coefficient and t-statistics) of the various models estimated using Stata (1997) dprobit are included in Tables 5.3 - 5.5.

9 All results significant at the 1% level, except Austrians and Africans significant at the 5% level. Results for foreigners from the Americas, the Middle East, and Asia were not significant. See Table 5.4.

rates. On the other hand, the remaining nationalities, who have higher self-employment rates than Germans, actually would decrease their entrepreneurial activities if they used the German decision structure. These nationalities have high propensities to become self-employed, in other words.

Table 3.2: Predicted Self-employment Rates by Nationality

(percent)	*actual rate*	*predicted rate*		
		Fi model: Fi var.	*Fi model: G var.*	*G model: Fi var.*
Greek	12.7	12.6	**19.2**	7.4
Italian	11.1	10.9	**18.0**	7.6
FYR	3.6	3.5	**5.8**	**7.8**
Austrian	14.9	–	–	11.4
Turkish	3.6	3.5	**8.3**	**6.6**
W European	10.7	10.8	**11.1**	8.8
E European	3.4	–	–	**8.1**
African	4.8	–	–	**8.3**
NS&C American	12.2	11.3*	12.1*	9.9
Middle Eastern	11.7	11.8*	11.4*	9.9
Asian	6.5	–	–	**7.5**
all foreigners	6.9			7.8
German	9.1			9.3

Source: own calculations using the 70% sample of the Mikrozensus and the Stata (1997) probit regression model and transformation calculation. Notes: *Fi* = each foreign nationality; *G* = German; *var.* = variable; **bold** highlights increase in rates; * = results based on weak model; – = results uncertain because of limited observations; see also Table 5.3 for nationality models.

We find some extreme differences across nationalities in the socioeconomic variables that affect self-employment. Individual nationalities have distinct patterns of where they live, what economic branches they work in, how much human capital they have, and how old they are. There are also very different self-employment rates. When we combine all nationalities into a group of aggregated foreigners, some of these distinctions are lost.

Some of the variation in self-employment rates across nationalities can be explained by these socioeconomic factors. However, when we hold these factors constant, the differences remain. Cultural factors seem to have a great influence on the self-employment propensity. Mere membership in a particular ethnic group may be enough to raise or lower the likelihood of being self-employed. Through the differences in socioeconomic characteristics across nationalities, these attitudes only become more pronounced and lead to even more dramatic differences in self-employment rates.

4. Comparing Kiosks and Consultancies: Self-employment Quality

A key to deciding whether self-employment can be used as a signal of assimilation is the evaluation of job quality. We proceed in three ways. The branch distribution of self-employed foreigners is examined relative to natives. The descriptive nature of such an exercise limits its measurement of quality. In other words, only dissimilarities become evident and subjective measures would be needed to evaluate quality. The second attempt to compare quality involves income measures. These may be applied to income distributions by branch or by nationality. The drawback of this approach is the distorted nature of self-employment incomes. The third attempt at employment quality uses another measure of success, business size (measured by number of employees). The problem with this measure is that newly established firms tend to be small. Years of operation and access to capital will have an impact on business size for which we cannot control using the available data.

4.1 Branch Distribution

As mentioned in the previous section, looking at the aggregate sample of foreign workers may mask some of the differences that occur within the group. This is especially pronounced when looking at branch distribution. (Compare Table 4.1 for aggregates.) Using a dissimilarity index, we can get a concise overview of the true differences across the 13 nationality groups and 11 (or more) economic branches (a total of 143 sub-categories).[10] The higher the index value, the greater the dissimilarity to the base-group. An index value equal to 100 would imply that the nationality group is never employed in the same branches as natives. Table 4.2 summarizes the results of three comparisons. Columns 2 and 3 compare the branch distribution of foreigners against the branch distribution of Germans for wage and salary employment and self-employment, respectively. In other words, the value of the index shows how different each nationality is from the German base-group when all branches are considered. In column 4, the dissimilarity within each nationality group is examined by comparing the distribution of self-employment to that of wage and salary employment.

Several conclusions can be drawn from these results. The nationality groups most similar to Germans are Western Europeans, Austrians, and Eastern Europeans. The groups may have a more similar human capital structure to the Germans when compared with other groups, leading to branch distributions similar to Germans'. The high education rates of the Europeans and Austrians combined with cultural factors which guide branch choice may be re-

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10 The dissimilarity index equals one half the absolute value of differences between branch (i) distributions for foreigners (F) and Germans (G) summed across all branches. $D=\frac{1}{2}*\Sigma|((Fi/F)*100)-(Gi/G)*100)|$

flected in the results. Greeks and Italians were the most different from the Germans. The opposite explanation of similarities may apply; there may be greater cultural or human capital differences. If one examines the most dissimilar groups to German wage employment, then it becomes clear that these are the former guest worker countries (with the exception of Asia). Here the implication is that a form of segregation took place, recruiting guest workers for branches and jobs that natives did not want (at the prevailing wages).

Table 4.1: Branch Distribution of the Self-employed

	branch distribution (percent of total)			*share (percent of branch)*	
	foreigners	*natives*	*all*	*Foreigners*	*natives*
agriculture	1.9	12.2	11.4	1.3	98.7
mining, utilities	0.2	0.2	0.2	7.5	92.5
manufacturing	10.1	12.6	12.4	6.3	93.7
construction	7.6	8.8	8.7	6.7	93.3
trade	20.9	20.3	20.3	7.9	92.1
transportation	4.3	3.8	3.8	8.6	91.4
finance, insurance	1.2	3.3	3.1	2.9	97.1
services	21.7	25.1	24.8	6.7	93.3
hospitality	29.1	5.5	7.3	30.5	69.5
health	2.8	8.0	7.6	2.9	97.1
organizations	0.2	0.3	0.3	5.5	94.5
Total	100.0	100.0	100.0	7.7	92.3

Source: own calculations using the 70% sample of the Mikrozensus.

The dissimilarity is even greater when comparing branch distribution in self-employment.[11] However, an average of about 10 index points could be subtracted by excluding agriculture (a branch in which Germans have a relatively high share of self-employment). Nevertheless, it is especially striking how much higher the index values of individual nationality groups are relative to the value for "all foreigners." Whereas the index for "all foreigners" stands below 25 points, most nationality groups exceed this value by more than 50%. The reason for the difference justifies the need to examine disaggregated nationality groups. In the comparison of the self-employed, the dissimilarity index shows very different values for each guest-worker nationality. This difference across immigrants from former recruitment countries is not evident in paid employment. The particularly low self-employment rates of persons from the FYR and Turkey may be the cause. Africans need some further explaining since they show up among the more similar in paid

11 The sum of the nationalities index values for self-employment is more than double the sum for wage and salary employment.

employment and the least similar in self-employment. Their small numbers, especially in self-employment, may explain some of the distortion.

Table 4.2: Dissimilarity Indices

(index; 0-100)	*relative to Germans in*		*relative to*
	w&s employment	*self-employment*	*w&s employment*
Greek	*33.7*	*55.0*	*50.9*
Italian	*29.8*	*47.4*	47.1
FYR	*24.2*	37.9	44.3
Austrian	**15.2**	**23.9**	**29.7**
Turkish	*26.7*	36.0	44.8
W European	**11.7**	**13.6**	**29.2**
E European	**15.3**	33.9	44.4
African	**15.4**	*43.9*	*57.8*
American	**15.8**	39.7	41.9
Middle Eastern	19.6	*46.4*	43.0
Asian	25.7	34.1	39.5
all foreigners	20.7	24.7	40.9
German	–	–	**32.3**

Source: own calculations using the 70% sample of the Mikrozensus. Notes: calculation based on 11 SIC categories[12]; lower values = **most similar**; higher values = *least similar*.

The last column of Table 4.2 hints at the possibility of branch switching when moving from wage employment into self-employment. We assume that most immigrants were wage workers in Germany before attempting self-employment. If persons opened businesses in branches in which they were previously employed, then the employment distribution may appear similar in these two sectors. Austrians, Western Europeans, and Germans appear to be the most conservative, choosing branches for self-employment in which they may have worked. Africans, Greeks, and Italians, at the opposite extreme, break into new branches by switching into self-employment, suggested by their high index values. This seems to counter Goldberg (1996: 73), who states that "Italians, Yugoslavs, and Greeks…generally have an education in the branch in which they establish a business, that is, they only make an attempt [to start a business] in areas in which they have knowledge." Further, Goldberg (1996) finds that Turks are less bound to previous experience, while our results show only about average dissimilarity. The difference between the observations may be partly explained on the grounds that one focused on education of individuals prior to becoming self-employed and

12 Calculations using more detailed categories increased the index values. However, country rankings remained essentially unchanged. For a discussion about the effects of using more or less detailed information as well as alternative dissimilarity indices, see OECD (1988b).

the other compared wage and salary employment versus self-employment, with no information on what experience or education each person had prior to self-employment.

4.2 Income Measures

Measurement and reporting errors make income comparisons across employment type somewhat tentative. Furthermore, the direction of causality is not clear. Do the self-employed receive a higher income because they are self-employed, or are higher income persons more likely to be self-employed? Services, hospitality, and, to a slightly lesser degree, trade show a concentration of persons in the lower half of the income distribution. Two of the branches identified by the greatest number of people in the top income category, services and trade, also had concentrations in the lower income category. Health is another branche in the top category. It follows that branch choice may indeed be a factor in income. Or interpreted for our purposes, some branches may represent lower quality self-employment, using income as a measure.

In Table 4.3, we take a different approach and examine the percentage of each population in the lowest as well as highest income quartiles. For wage employment, about one third of "all foreigners" earns less than 1400 D-Marks per month. For some nationalities only about a quarter of the persons are in that category, while for others it exceeds one third. Less than 2% of "all foreigners" reach the top quartile, 5500 D-Marks or more per month.

Turning our attention to the distribution of the self-employed, Table 4.3 shows that for all nationalities (except Africans and Americans), the percentage in the lowest income quartile declines. What is even more striking is the share of people in the top quartile. One quarter of all self-employed Germans falls into the top quartile, while one sixth of all foreigners also does. Of course there are significant differences across nationalities, but even nationalities, such as the FYR and Turkey, that only had a fraction of a percent in the top quartile for wage employment, have almost 10% in the quartile when looking at self-employment. Again, the direction of causality is not established.

Borjas and Bronars (1988) explain income differences with consumer discrimination. Consumer discrimination and the resulting reduction in self-employment opportunities (smaller range of self-employment income) would most likely explain self-employment rate differences between natives and foreigners, however, not necessarily between different nationalities. Consumer discrimination would only be a factor if natives and foreigners shared the same preferences (discriminated in the same way).

Table 4.3: Distribution of Monthly Personal Income by Nationality

(percent of nationality)	*w & s employment*		*self-employment*	
	< 1400 DM	*≥ 5500 DM*	*< 1400 DM*	*≥ 5500 DM*
Greek	**26.8**	0.5	**18.4**	9.6
Italian	**27.9**	1.1	12.5	15.8
FYR	**29.9**	0.3	**22.0**	10.1
Austrian	**25.9**	9.5	8.5	**30.4**
Turkish	**31.8**	0.2	**17.1**	9.4
W European	23.0	**6.4**	**19.6**	22.1
E European	**44.4**	0.8	**14.7**	8.8
African	**35.0**	0.8	**41.2**	6.1
American	**28.3**	**6.8**	**28.0**	23.0
Middle Eastern	**40.2**	2.5	**25.1**	12.5
Asian	**42.1**	4.7	13.9	19.8
all foreigners	31.1	1.8	18.0	15.5
German	23.8	4.7	14.0	24.7

Source: own calculations using the 70% sample of the Mikrozensus. Note: **bold** highlights shares higher than Germans'.

From the data we can conclude that self-employment may provide both high and low quality employment opportunities for foreigners. Even at the lower end of the income distribution, it may be an improvement to wage employment. However, relative to Germans, there is a stronger concentration in the lower-income section of self-employment. This may be due to branch choice or socioeconomic factors which would also result in lower paid employment. In addition, the effects of the younger age structure of immigrants may be hidden in our results. High quality or high earnings possibilities in self-employment also exist for foreigners, not just Germans. In fact, these opportunities may only exist in self-employment, and not in wage employment.

4.3 Number of Employees

Turning to income distribution by number of employees, we find, as expected, that the self-employed without employees are concentrated at the lower half of the income distribution. This also occurs, but to a lesser degree for the category of 1-4 employees. Furthermore, the data clearly show that there is a relative concentration (left-skewed distribution) of foreigners at the lower half of the income distribution. This is especially pronounced for the self-employed foreigners with no employees and those with one to four employees. Germans have a much more even distribution across income categories. While the group with no employees also tends to appear in the lower half of the income distribution, the concentration is not nearly as pronounced as it is for foreigners. One additional point should be made about the distribution. Natives and foreigners both make

a strong showing in the top income category, especially if they have one to four employees. About 7.5 thousand foreigners are in this combination of categories, and about 161 thousand Germans.

Table 4.4 provides an overview of business size for most of our nationality groups. According to the percentage distribution of the three size categories, immigrants from the Americas, Austria, and Eastern Europe most often work alone. Only the Greeks and Italians have a proportionately smaller share of self-employed with no employees than the Germans. Self-employed Italians reach the largest category, five or more employees, proportionately more often than all other immigrants and even more often than Germans. Immigrants from Eastern Europe, Turkey, and the Americas have very small proportions of their respective self-employed in the largest category.

Table 4.4: Business Size Distribution by Number of Employees

	percent distribution by number of employees			*total number*
	none	*1 to 4*	*5 or more*	
Greek	*40.1*	**53.7**	6.2	28,724
Italian	*36.0*	**49.5**	**14.5**	37,162
FYR	**46.8**	**47.5**	5.7	20,593
Austrian	**63.3**	*28.6*	8.1	16,841
Turkish	**52.2**	**44.5**	*3.2*	35,762
W European	**54.3**	36.8	8.9	40,579
E European	**65.9**	34.1	*0.0*	7,101
American	**67.6**	*27.6*	*4.8*	9,450
all foreigners	50.3	41.7	7.9	220,471
German	42.1	44.1	13.8	2,647,287

Source: own calculations using the 70% sample of the Mikrozensus. Note: **bold** highlights rates above Germans'.

4.4 Total Quality Assessment

Based on size, income, and branch, we find a common theme about the nature of immigrant self-employment. It is as heterogeneous as the immigrant population itself. There is some evidence that self-employment taken by foreigners is worse than that of natives. However, there is also information that it is comparable. Much depends on what measurement is used.

The data also makes apparent that the rift between good quality and poor quality does not correspond to the division of nationalities. Rather, within each nationality group, we can find concentrations at both poles. Furthermore, a nationality that appears to be concentrated in the lower-quality category according to one measure, may surface as highly concentrated in the

top category according to a different measure. However, it cannot be overemphasized that foreign self-employment is also composed of high-quality work.

Is self-employment quality lower or higher for foreigners? The answer is "both." It can be at either extreme or in the neutral territory. This fits our assimilation hypothesis. We expect to find both highly assimilated immigrants and others that are just beginning the process in Germany. As a result, we can assume that both the assimilated and the unassimilated have an opportunity to become self-employed based on the quality differences. The assimilated will select themselves into the higher quality opportunities, while the less assimilated move into the lower quality jobs. Without the presence of the less assimilated, these opportunities for self-employment may go unexploited.

5. Approaching Similarity: Effects of Assimilation

In which direction does assimilation drive self-employment rates? One would expect differences across ethnic groups; those with self-employment rates above Germans should be lower (closer to the German rate) in the second generation and those with rates below, should move higher. We also look at the influence of years-since-migration. Does this variable affect every nationality equally? Here we can expect differences based on ethnic propensities and the legal framework.

In creating a sub-sample to examine arrival years, only observations which provide immigration information are retained. This reduces the number of foreigners observed from 15,303 to 14,165 (representing 2.982 million, see Table 5.1). The sub-sample introduces some downward bias to the self-employment rate of foreigners: the rate falls from 7.0% for the full sample to 6.7% for those that provide immigration information. A descriptive analysis shows that the second generation of immigrants reaches higher education levels than the first, confirming our suspicion of greater assimilation.

Having examined which characteristics, including nationality, impact the self-employment choice and the qualitative nature of this choice, we can now focus on assimilation. We proceed by testing the effect that being in the second generation, as a variable, has on the self-employment choice. As we have seen, the differences in socioeconomic variables play a role in causing different self-employment rates across nationalities. We can expect the same effects between generations. We can control for differences in these socioeconomic variables by performing maximum likelihood regressions. Here, we add a variable that identifies the second generation to the model estimated for the discussion in Section 3.

Table 5.1: Generations by Nationality

	1st generation		2nd generation		percent in
	w & s emp	self-emp	w & s emp	Self-emp	2nd generation
Greek	143,051	20,211	41,735	6,150	29.3
Italian	206,156	27,711	70,898	5,620	32.7
FYR	456,230	18,074	70,327	1,247	15.1
Austrian	67,634	11,564	15,197	2,244	22.0
Turkish	666,924	26,309	231,254	7,309	34.4
W European	242,099	28,377	64,887	6,626	26.4
E European	180,542	6,683	5,444	208	3.0
African	63,251	3,255	5,536	339	8.8
American	55,087	7,211	5,807	908	10.8
Middle Eastern	80,021	10,737	3,058	214	3.6
Asian	82,182	5,119	2,947	217	3.6
all foreigners	2,263,040	166,372	520,684	31,672	22.7
German	25,791,067	2,647,287	n.a.	n.a.	n.a.

Source: own calculations using the 70% sample of the Mikrozensus.

After controlling for age, education, gender, state, and nationality, we find that merely being a second-generation foreigner increases the likelihood of being self-employed by 1.3%.[13] Nationality differences also remain. Immigrants from Greece (9.9%), Italy (7.1%), Austria (4.7%), Western Europe (4.0%), the Americas (3.1%), and the Middle East (4.1%) all have higher self-employment probabilities (shown in parentheses) when compared to Turks. Only foreigners from the FYR (-1.2%) and Eastern Europe (-2.2%) have lower probabilities.

We can also look at the combined effects of being in the second generation and belonging to a specific nationality. This increases the second generation effect; membership in the second-generation raises the self-employment probability by 2.6%. The nationality effect increases in some cases but decreases in others. However, the most interesting result is that the interacted terms (second generation and nationality) may confirm our hypothesis of self-employment rate convergence.[14] Second-generation terms for nationalities that had rates (in the first generation) above Germans, were negative. The terms were positive for nationalities that had self-employment rates lower than Germans. Immigrants from the FYR and the Americas were the only exceptions.

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13 Marital status, household and community size are not significant in the model.

14 However, due to the limited number of observations the results were statistically insignificant and a corresponding table was not included. As the size of the second-generation sample increases, it may be possible to obtain significant results to confirm our theory.

We can also repeat the exercise in Section 3 of predicting self-employment rates. This time we concentrate on the generation differences rather than nationality differences. The results summarized in Table 5.2 indicate a higher self-employment propensity in the second generation, confirming higher self-employment rates by age group found in the descriptive analysis. If the second generation used the decision model of the first, they would have an even lower self-employment rate. However, if the second generation had the socioeconomic characteristics of the first, they would almost double their self-employment rate.

Table 5.2: Predicted Self-employment Rates by Generation

(percent)	*1st generation model*	*2nd generation model*	*actual*
1st generation characteristics	6.9	11.2	6.9
2nd generation characteristics	5.2	5.9	5.7
combined characteristics	6.2	10.2	6.7

Source: own calculations using the 70% sample of the Mikrozensus and the Stata (1997) probit regression model and transformation calculation.

It is worth noting that in the second-generation model, all the nationality terms (with the exception of Greeks) become insignificant. This again implies that assimilation leads to more similarity between foreigners. Assimilation may have reduced, if not erased, the ethnic capital.

5.1 Years-Since-Migration

We should review the importance of the years-since-migration (YSM) variable. A longer presence implies more familiarity with the "system", better language ability, and broader social / business networks, all of which can lead to higher self-employment rates. The intention to stay is critical to the self-employment decision. Judging from the results found by Steiner and Velling (1994), YSM may be a partial proxy for "intention to stay" since those with a long presence also plan to stay longer. What needs to be kept in mind is that the intention to stay is not a one-time decision.

Looking at YSM, we find a positive correlation with the self-employment rate. Each additional decade spent in Germany increases the probability of self-employment by 1.6%. After controlling for YSM, we can compare the predicted rates for the first and second generations. We discover that the predicted rates are much closer, only half a percentage point difference, than if we do not control for YSM (the results in Table 5.2). In other words, even the first generation behaves in ways similar to the second generation after a enough years in Germany. This shows the assimilation effects that accompany

YSM. Two caveats apply. The coefficients for the nationality dummies are smaller when we control for the second generation (looking at both the first and second) than if we control for YSM (looking at only the first generation). Further, it must be noted that significant and sizable differences across nationalities exists, even after controlling for YSM. For example, being Greek implies an 11.1% higher likelihood[15] of being self-employed than if one is Turkish, *ceteris paribus*.

5.2 The Same, Yet Still Different

We find that some convergence of self-employment rates does indeed take place with assimilation. Both in using the second generation as a proxy and using years-since-migration as measure, we discover a decrease in size of the nationality factor in determining the likelihood of self-employment. Furthermore, if we only look at the second generation of immigrants,[16] the regression analysis tells us that nationality is no longer a significant factor in self-employment probabilities, *ceteris paribus*.

Of course, all else is not equal, as we see in a descriptive analysis. Based on socioeconomic differences, we can still expect to find differences in self-employment rates even if nationalities are assimilated.

6. Self-employment as an Indicator of Assimilation?

The interactions between self-employment and assimilation are clear. The decision to engage in the assimilation process and the choice to engage in entrepreneurial activity share similar motivating factors. In other words, factors which ease assimilation may also promote self-employment. Barriers can equally block or slow assimilation and entrepreneurship. Furthermore, assimilation can directly drive self-employment and vice versa.

Germany's complex web of legislation that governs the life of foreigners in the country has a limited direct impact on their self-employment opportunities, especially of longer-term immigrants. However, due to the severe restrictions that apply to some groups during the early immigration stages, there may be an indirect effect on self-employment. The motivation to assimilate and to become self-employed may be molded in these early stages, requiring time to change later. Some groups may react to the restrictions by deciding that self-employment is much too difficult to realize in Germany, due to their limited assimilation. Others may find a way to limit assimilation through self-employment, especially if ethnic colonies exist.

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15 See regression results (YSM model) in Table 5.4.
16 See regression results in Table 5.5.

Table 5.3: Nationality Models (d probit)

	German model			Greek model			Italian model			FYR model		
age	0.0090	18.80	*	0.0327	4.46	*	0.0184	3.65	*	0.0090	4.26	*
age2	-0.0001	-13.04	*	-0.0004	-4.15	*	-0.0002	-3.43	*	-0.0001	-4.02	*
male	0.0447	32.92	*	0.0406	1.99	**	0.0488	2.93	**	0.0153	2.57	*
married	-0.0043	-2.49	**	-0.0510	-1.91	**						
hh size	0.0042	7.06	*									
	(career education dummies; base: no education)											
trade	0.0054	2.59	*	0.0938	4.02	*	0.0722	4.32	*	0.0101	1.55	
master	0.1246	34.22	*	0.0390	0.45		0.2096	3.59	*	0.0452	2.34	**
uni	0.0674	22.81	*	0.2150	3.68	*	0.2267	4.36	*	0.0666	3.49	*
	(community size dummies; base: mid-sized; state dummies used: yes/no)											
city	0.0140	5.59	*									
town	0.0122	7.85	*									
state dum		yes			no			yes			yes	
# obs.		169767			997			1507			2537	
r2		0.076			0.079			0.094			0.105	
	Turkish model			W Euro model			American model			Mid East model		
age	0.0084	4.84	*	0.0089	1.88		0.0079	0.70		0.0012	0.11	
age2	-0.0001	-4.66	*	-0.0001	-1.52		-0.00002	-0.21		0.0001	0.45	
male	0.0068	1.23		0.0531	3.73	*	-0.0456	-1.42		0.0792	2.45	*
married							-0.0559	-1.51		0.0527	1.67	
hh size	-0.0052	-3.08	*				0.0314	2.60	*			
	(career education dummies; base: no education)											
trade	0.0156	2.68	*	0.0542	2.72	*	-0.0622	-1.60		0.0351	0.95	
master	0.3004	7.01	*	0.1599	3.74	*	0.3077	2.74	*	-0.0569	-0.89	
uni	0.0472	2.22	**	0.1745	6.55	*	0.0518	1.33		0.1004	2.33	
	(community size dummies; base: mid-sized; state dummies used: yes/no)											
city												
town												
state dum		no			no			no			no	
# obs.		4180			1728			365			414	
r2		0.073			0.069			0.146			0.143	

Notes: coefficients in first column of each model are percent changes for one unit increase in independent variable or for dummy moving from 0 to 1, see Stata dprobit model; second columns show t-statistics; * significant at the 1% level; ** significant at the 5% level.

Table 5.4: Combined Models (d probit)

	All nationality model			All generation model			YSM model (1st gen)		
age	0.0087	19.40	*	0.0105	7.95	*	0.0093	6.24	*
age2	-0.0001	-13.62	*	-0.0001	-7.25	*	-0.0001	-6.04	*
male	0.0432	33.53	*	0.0241	6.22	*	0.0250	6.01	*
married	-0.0036	-2.24	**						
hh size	0.0035	6.31	*						
	(nationality dummies; base: German for All nat., Turkish for others)								
greek	0.0616	6.51	*	0.0991	9.42	*	0.1079	9.21	*
italian	0.0378	5.10	*	0.0707	8.25	*	0.0781	8.20	*
fyr	-0.0422	-8.00	*	-0.0120	-1.92	**	-0.0084	-1.22	
austrian	0.0250	2.29	**	0.0468	3.97	*	0.0499	3.87	*
turkish	-0.0328	-7.22	*						
weur	0.0208	3.18	*	0.0396	5.14	*	0.0458	5.26	*
eeur	-0.0440	-5.18	*	-0.0220	-2.74	*	-0.0140	-1.48	
african	-0.0276	-1.93	**	-0.0011	-0.08		0.0053	0.37	
americas	0.0112	0.84		0.0310	2.40	*	0.0452	3.12	*
mideast	0.0189	1.45		0.0409	3.31	*	0.0524	3.83	*
asian	-0.0096	-0.70		0.0075	0.61		0.0168	1.23	
	(career education dummies; base: no education)								
trade	0.0097	5.04	*	0.0290	6.41	*	0.0313	6.42	*
master	0.1303	37.20	*	0.1230	8.81	*	0.1374	9.06	*
uni	0.0733	26.04	*	0.1011	11.07	*	0.1148	11.45	
	(share75: 2nd generation dummy; ysm: years-since-migration)								
share75				0.0130	2.19	**			
ysm							0.0016	2.24	*
ysm2							-0.00001	-0.81	*
	(community size dummies; base: mid-sized; state dummies used: yes/no)								
city	0.0124	5.41							
town	0.0120	8.11							
state dum		yes			yes			yes	
# obs.		183787			13291			12010	
r2		0.0775			0.103			0.103	

Notes: coefficients in first column of each model are percent changes for one unit increase in independent variable or for dummy moving from 0 to 1, see Stata dprobit model; second columns show t-statistics; * significant at the 1% level; ** significant at the 5% level.

Table 5.5: Generation Models (d probit)

	1st generation model		2nd generation model		
age	0.0091	5.6	0.0101	3.98	*
age2	-0.0001	-5.2	-0.0001	-3.16	*
male	0.0206	4.54	0.0342	4.61	*
married			0.0126	1.61	
(nationality dummies; base: Turkish)					
greek	0.0990	7.99	0.0670	4.12	*
italian	0.0824	8.04	0.0184	1.53	
fyr	-0.0121	-1.70	-0.0141	-1.07	
austrian	0.0546	3.99	0.0224	1.11	
weur	0.0436	4.73	0.0118	0.97	
eeur	-0.0226	-2.53	-0.0159	-0.51	
african	0.0005	0.03	0.0033	0.08	
americas	0.0309	2.12	0.0462	1.41	
mideast	0.0514	3.71	0.0052	0.11	
asian	0.0074	0.55	0.0274	0.47	
(career education dummies; base: no education)					
trade	0.0354	6.59	0.0110	1.41	
master	0.1465	8.87	0.0478	2.08	**
uni	0.1173	11.32	0.0463	2.31	**
(state dummies used: yes / no)					
state	no		no		
# obs.	10806		2485		
r2	0.0918		0.154		

Notes: coefficients in first column of each model are percent changes for one unit increase in independent variable or for dummy moving from 0 to 1, see Stata dprobit model; second columns show t-statistics; * significant at the 1% level; ** significant at the 5% level.

A whole list of socioeconomic factors affects the self-employment propensity. This is no exception for foreigners. However, the extent to which these individual factors influence the likelihood of being self-employed varies considerably. In addition to the standard variables of age, gender, marital status, household size, education, and location, foreigners also have nationality and immigration variables. Years-since-migration or immigrant generation have significant positive effects on self-employment probabilities. Ethnic preferences, values, and beliefs are reflected in the nationality variable, also with significant effects. However, the size and direction of the effect, whether positive or negative, depends on the nationality.

Beyond the socioeconomic factors, the decision to become self-employed is indirectly based on beliefs and values. These values control how much utility is assigned to specific components of employment. Two people with the same values facing the same decision

are expected to make the same choice. If two people choose differently, it is either because they face different alternatives or they have different values. Because we examine aggregated nationality groups, we eliminate some of the minute variations in values that may occur on the individual level. Germans as natives and as the largest group, represent the values that must be assimilated. Therefore, we expect those groups of foreigners who are assimilated to show similar self-employment propensities to the Germans.

Immigrants from Greece, Italy, and Austria and, to a lesser extent, Western Europe, the Americas, and the Middle East, show stronger propensities towards self-employment than the Germans. Only their less beneficial socioeconomic characteristics keep their self-employment rates from being even further above the Germans'. Other nationalities have lower self-employment rates not just because of the socioeconomic characteristics but also because of a lower inclination to become self-employed. The most striking examples are immigrants from the Former Yugoslav Republic and from Turkey. Nationality clearly plays a role in the likelihood of being self-employed.

There is evidence of segregation by branches. Natives and foreigners are rarely self-employed in the same branches. An explanation may be lower barriers to entry for the branches chosen by immigrants. In addition, concentrations may be due to social networks. If a nationality group is predominant in certain economic sectors, then social networks reinforce the concentration when contact to other nationalities is limited.

Is the self-employment of foreigners comparable in quality to that of natives? The answer from our examination is not completely clear. There is some evidence of lower- quality self-employment, in terms of income and business size. However, there is an equal amount of evidence that speaks to similar quality, with high income potential and one or more employees. In addition, we can see that wage and salary employment for many foreigners may actually be of a lower quality (lower, smaller income range). This would increase the benefits of exploring entrepreneurial activities for foreigners. The two poles of entrepreneurial quality may correspond to the extremes of completely unassimilated to fully assimilated immigrants in Germany.

In which direction does assimilation impact the choice to become self-employed? It appears that the propensity generally increases with assimilation. This preserves differences in rates across nationalities. However, the effects of the nationality factor are less pronounced in the second generation and in some models are no longer significant. Years-since-migration has a similar effect, only slightly decreasing nationality differences while increasing the likelihood of self-employment overall. In the aggregate, increasing self-employment with assimilation may, in part, reflect the assimilation effects of low-self-employment nationalities, which also make up the largest foreign populations in Germany.

We find that foreigners' socioeconomic characteristics, especially the younger age profile, should cause self-employment rates for foreigners to be lower than for Germans. It appears that the cultural factor offsets these socioeconomic effects for certain nationalities, leading to self-employment rates above the Germans. For other immigrant nationalities, these cultural factors cause even lower self-employment propensities than are explained by socioeconomic differences alone.

It appears that self-employment can be a positive contributor to and indicator of assimilation. With this in mind, the German government could further its stated goals of integrating foreigners by promoting high-quality self-employment.

6.1 Points for Future Study

While the paper did rule out that foreign self-employment is always inferior to German self-employment, a few question remain unanswered. Are self-employment rates high despite the existence of low-quality jobs because immigrants, in general, have not assimilated? In other words, it is possible that self-employment rates may be higher because unassimilated foreigners are willing to exploit even low-quality entrepreneurial opportunities. The correlation between job quality and assimilation is not completely clear because assimilation is manifest to varying degrees. In a future study it would be necessary to examine the nationality and immigration characteristics of those at the two quality poles. A two-step model of self-employment selection and income may be possible.

Branch choice is another issue which should be explored in more detail in future studies. Specifically, it would be useful to see more evidence of the branch choices, including quality measurements, made by the second generation. Unfortunately, our data contain too few observations on the second-generation to be able to produce reliable descriptions of the details. Additional survey evidence or over-sampling of the second generation could fill the data gap.

Finally, it would be useful to have information about survival rates of the self-employed. Are foreigners' businesses more likely to fail than Germans'? It would also be helpful to find out if nationality and immigrant factors play a greater role in business failures than the more universal factors. Beyond survival information, exploring the longer-term effects of the self-employment experience in improving labor market prospects would be of interest. Low-quality self-employment may just be the entry point, leading to high-quality self-employment later. Alternatively, self-employment may just be temporary, developing skills and experience which may improve the prospects in the wage and salary sector. This type of analysis would point to evidence that quality is a dynamic variable. A detailed time series would be necessary to explore these questions.

The empirical analysis combined with the theoretical perspective provided by this study would be beneficial to any further examinations of self-employment and assimilation in Germany.

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